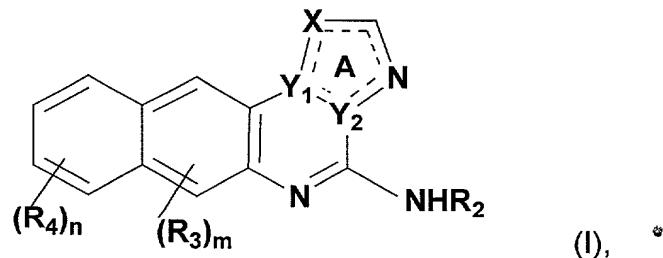


CLAIMS

We claim:

1. A compound of the formula:

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or a pharmaceutically-acceptable salt thereof, wherein

X is NR₁, CR₁, or S;

Y₁ and Y₂ are nitrogen or carbon, provided that

a) when X is CR₁, at least one of Y₁ and Y₂ is nitrogen, and b) when one of Y₁ and Y₂ is carbon, the other of Y₁ and Y₂ is nitrogen and/or X is NR₁ or S, so that ring A defines a five-membered heteroaryl ring having at least two heteroatoms;

R₁ is hydrogen, halogen, alkyl, substituted alkyl, cyano, OR₅, NR₅R₆, C(=O)R₅, CO₂R₅, or aryl;

R₂ is alkyl, substituted alkyl, alkenyl, alkynyl, alkoxy, alkylthio, aryl, heteroaryl, heterocyclo, cycloalkyl, or substituted cycloalkyl;

R₃ and R₄ are independently selected from halogen, alkyl, substituted alkyl, nitro, cyano, OR₇, NR₇R₈, C(=O)R₇, CO₂R₇, SR₇, C(=O)NR₇R₈, NR₇C(=O)R₈, NR₇C(=O)OR₈, S(O)_qR₇, NR₇SO₂R₈, and SO₂NR₇R₈;

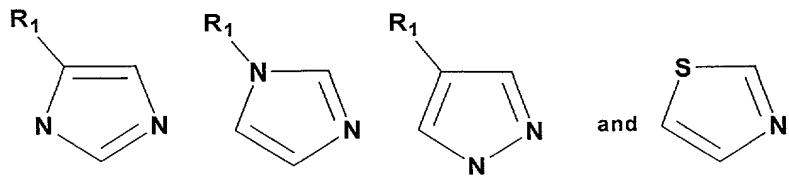
R_5 , R_6 , R_7 , and R_8 are independently selected from hydrogen, alkyl, substituted alkyl, and phenyl, or when attached to the same nitrogen atom (as in NR_5R_6 or NR_7R_8) may join together to form a heterocycle or heteroaryl; and

m , n and q are independently 0, 1, or 2.

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2. The compound of claim 1, or a pharmaceutically-acceptable salt thereof, in which X is NR_1 or CR_1 , and R_1 is hydrogen, lower alkyl, or trifluoromethyl.

10 3. The compound of claim 1, or a pharmaceutically-acceptable salt thereof, in which X , Y_1 and Y_2 are selected so that ring A defines one of:



15 4. The compound of claim 1 or a pharmaceutically-acceptable salt thereof, in which:

R_2 is C_{1-4} alkyl optionally substituted with OR_9 or $NR_{10}R_{11}$;

R_9 is hydrogen or lower alkyl; and

20 R_{10} and R_{11} are (i) independently selected from hydrogen, C_{1-4} alkyl, C_{1-4} substituted alkyl, and $-(C=O)C_{1-2}$ alkyl, or alternatively (ii) together form a five to six membered heterocycle or heteroaryl.

5. The compound of claim 1, or a pharmaceutically-acceptable salt thereof, in which R₂ is C₁₋₂ alkyl optionally substituted with one of:

OH, NH₂, NH(C₁₋₂alkyl), N(C₁₋₂alkyl)₂, NH(C₁₋₂substituted alkyl), N(C₁₋₂substituted alkyl)₂, NH(C=O)C₁₋₂alkyl, or piperidinyl.

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6. The compound of claim 1 or a pharmaceutically-acceptable salt thereof, in which R₂ is aryl having zero to three substituents selected from halogen, lower alkyl, trifluoromethyl, alkoxy, and nitro.

10 7. The compound of claim 1 or a pharmaceutically-acceptable salt thereof, in which

X, Y₁ and Y₂ are selected so that ring A defines one of pyrazolyl, imidazolyl, or thiazolyl;

R₁ is hydrogen, methyl, ethyl, or trifluoromethyl; and

15 R₂ is C₁₋₂alkyl optionally substituted with one of OH, NH₂, NH(C₁₋₂alkyl), N(C₁₋₂alkyl)₂, NH(C=O)C₁₋₂alkyl, or a five to six membered heterocycle.

20 8. The compound of claim 1, or a pharmaceutically-acceptable salt thereof, in which R₃ and R₄ are selected from halogen, alkyl, substituted alkyl, nitro, cyano, OR₇, NR₇R₈, C(=O)R₇, CO₂R₇, SR₇, C(=O)NR₇R₈, NR₇C(=O)R₈, NR₇C(=O)OR₈, S(O)_qR₇, NR₇SO₂R₈, and SO₂NR₇R₈;

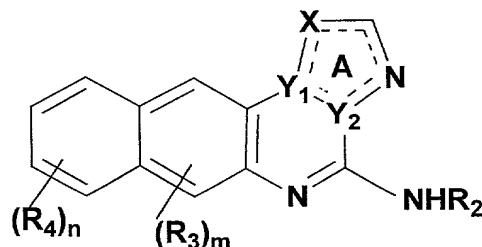
R₇ and R₈ are independently selected from hydrogen and alkyl; and

m and n are independently 0, 1, or 2, provided that m and n are not both 0.

9. The compound of claim 1, or a pharmaceutically-acceptable salt thereof, in which m and n are both 0.

10. A compound having the formula,

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or a pharmaceutically-acceptable salt thereof, wherein

X is NR₁, CR₁, or S;

Y₁ and Y₂ are nitrogen or carbon, provided that:

a) when X is CR₁, at least one of Y₁ and Y₂ is nitrogen, and b) when one of Y₁ and Y₂ is carbon, the other of Y₁ and Y₂ is nitrogen and/or X is NR₁ or S, so that ring A defines a five-membered heteroaryl ring having at least two heteroatoms;

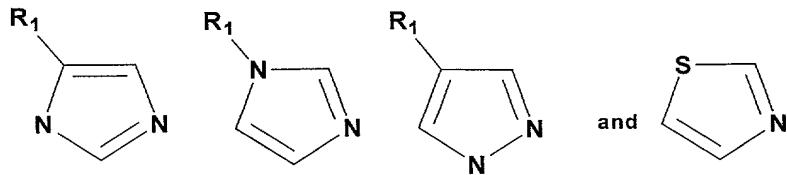
15 R₁ is hydrogen, halogen, lower alkyl, or trifluoromethyl;

R₂ is C₁₋₄ alkyl optionally substituted with a group selected from hydroxy, alkoxy, NH₂, NH(alkyl), N(alkyl)₂, NH(substituted alkyl), N(substituted alkyl)₂, and NH(C=O)alkyl, and heterocycle;

20 R₃ and R₄ are independently halogen, lower alkyl, substituted lower alkyl, nitro, cyano, alkoxy, amino, -CO₂H, -C(=O)H, or alkylthio; and

m and n are independently 0, 1, or 2.

11. The compound of claim 10, or a pharmaceutically-acceptable salt thereof, in which X, Y₁ and Y₂ are selected so that ring A defines one of:



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12. The compound of claim 11, or a pharmaceutically-acceptable salt thereof, in which:

R₂ is C₁₋₂ alkyl optionally substituted with a group selected from OH, NH₂, NH(C₁₋₂alkyl), N(C₁₋₂alkyl)₂, NH(C₁₋₂substituted alkyl), N(C₁₋₂substituted alkyl)₂, and piperidinyl.

10

13. The compound of claim 1, selected from (i)

benzo[g]-4-(2-N-methylaminoethylamino)-1-methylimidazo[1,2-a]quinoxaline;

benzo[g]-4-methylamino-1-methylimidazo[1,2-a]quinoxaline;

15 benzo[g]-4-(2-N-methylaminoethylamino)-1-methylpyrazolo[1,2-a]quinazoline;

benzo[g]-4-methylamino-1-methylpyrazolo[1,2-a]quinozoaline;

1-methyl-4-methylaminobenzo(g)-imidazo(4,5-c)quinoline;

1-methyl-4-(2-N-methylaminoethylamino)benzo(g)imidazo(4,5-c)quinoline,

1-methyl-4-methylaminobenzo(g)-thiazolo(4,5-c)quinoline;

20 1-methyl-4-(2-N-methylaminoethylamino)benzo(g)thiazolo(4,5-c)quinoline;

1-Methyl-4-(2-hydroxyethylamino)benzo[g]imidazo[1,2-a]quinoxaline,

1-Methyl-4-(2-piperidin-1-yl-ethylamino)benzo[g]imidazo[1,2-a]quinoxaline; and

(ii) a pharmaceutically-acceptable salt thereof.

14. A pharmaceutical composition comprising (a) at least one compound according to claim 1, or a pharmaceutically acceptable salt thereof, and (b) a pharmaceutically acceptable carrier or diluent.

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15. A pharmaceutical composition comprising (a) at least one compound according to claim 10, or a pharmaceutically acceptable salt thereof, and (b) a pharmaceutically acceptable carrier or diluent.

PATENT APPLICATION

10 16. A method of treating an inflammatory or immune disease or disorder comprising administering to a mammal in need thereof a therapeutically-effective amount of at least one compound according to claim 1.

15 17. A method of treating an inflammatory or immune disease or disorder comprising administering to a mammal in need thereof a therapeutically-effective amount of at least one compound according to claim 10.

20 18. The method of claim 16 in which the inflammatory or immune disease is selected from rheumatoid arthritis, asthma, inflammatory bowel disease, chronic obstructive pulmonary disease, and psoriasis.

19. The method of claim 16 in which the inflammatory or immune disease is HIV, HSV-1, breast cancer, prostate cancer, or Hodgkin's lymphoma.